DOCUMENT RESUME

ED 308 639 EC 220 502

AUTHOR	Porter, Mahlon E.
TITLE	How Vocational Teachers Rate Classroom Performance of Students with Mild Handicaps Using Curriculum-Based Vocational Assessment Procedures.
INSTITUTION	Dependents Schools (DOD), Washington, D.C. European Area.
PUB DATE	Oct 88
NOTE	30p.; Paper presented at the Annual Convention of the Council for Exceptional Children (67th, San Francisco, CA, April 3-7, 1989).
PUB TYPE	Reports - Evaluative/Feasibility (142) -- Speeches/Conference Papers (150)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	Course Evaluation; Employer Employee Relationship; *Employment Potential; Job Skills; *Mainstreaming; *Mild Disabilities; *Outcomes of Education; Peer Acceptance; Secondary Education; *Student Evaluation; *Vocational Education; Vocational Interests; Work Attitudes
IDENTIFIERS	*Curriculum Based Vocational Assessment; Dependents Schools

ABSTRACT

This final evaluation report describes the Curriculum-Based Vocational Assessment (CBVA) project of the Department of Defense Dependents Schools (DoDDS). The program serves mildly handicapped (learning disabled and mildly retarded) secondary level students in 18 regular vocational education courses delivered in 45 middle, junior high, and senior high schools in DoDDS schools in Germany. CBVA assessment forms for 1,811 students were completed by 317 teachers, job placement coordinators, or work site supervisors. The project found that special education students were rated in the upper quartile for all 21 work-related behaviors indicating positive social adaptability in this setting. Performance on generalized employability skills was mixed with students average or better in applying academic skills to vocational instruction but was less proficient in categories related to employer-employee relationships. Vocational teachers indicated that extra assistance was routinely provided, with proficiency levels dramatically improved by such assistance. Results are reported both textually and graphically with findings separated by sex and by grades 6-8 and grades 9-12 for the following categories: grouped work related behaviors; grouped generalized employability outcomes; occupational skills outcomes; interest/aptitude; individual work related behaviors; and individual generalized employability outcomes. Additional charts present results on teacher assistance for the same categories. (DB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

ED308639

HOW VOCATIONAL TEACHERS RATE CLASSROOM PERFORMANCE OF STUDENTS WITH MILD HANDICAPS USING CURRICULUM-BASED VOCATIONAL ASSESSMENT PROCEDURES

Prepared

by

Education Division
DoDDS-Germany Region

October 1988

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Smith
Nurss

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

EC 220502

Paper presented at the Annual Convention of the
Council for Exceptional Children
(67th, San Francisco, CA, April 3-7, 1989)

DEPARTMENT OF DEFENSE
DEPENDENTS SCHOOLS
OFFICE OF THE REGIONAL DIRECTOR
GERMANY REGION
APO NEW YORK 09634-0005

Education Division DoDDS-G

F O R E W O R D

The following document represents the final program evaluation of the DoDDS-G Curriculum-Based Vocational Assessment (CBVA) project. The evaluation was conducted by Dr. Mahlon E. Porter, Branch Chief, Education Division, DoDDS-Germany.

The many personnel who helped develop the CBVA Model and especially the secondary level vocational teachers and Cooperative Work Experience Coordinators who participated in rating special needs students in their classes are commended for their efforts. The project is among the most comprehensive effort to date by a United States school system to design and implement a CBVA procedure. The accompanying research is also contributing to the needs of the profession at large through the rare documentation of how well learning impaired students achieve in regular vocational programs.

The CBVA Model as well as the research has reached United States and international audiences through publication of journal articles and presentations at conferences. The authors of a recent text on CBVA have recognized DoDDS-Germany for its contribution to many of the ideas expressed and documents used in the text.

DoDDS-Germany Educators can take pride in their pioneering achievements with regard to CBVA development. Many school systems are interested in the procedural manual and are developing similar approaches thanks to the professionalism demonstrated in this project.

Dean C. Wiles

DEAN C. WILES
Chief, Education Division

DISTRIBUTION: A, D, E, P: CSC Chairperson
ERC
Special Education Specialist

TABLE OF CONTENTS

Foreword i

Table Of Contents ii

Purpose 1
Curriculum-Based Vocational Assessment Rating Form 3

Method 2

Results 5

Work Related Behavior Observations 5
Chart I 6
Chart II 6

Generalized Employability Outcome Applications 7
Chart III. 8
Chart IV 8

Occupational Skills Gained 7
Chart V. 10
Chart VI 10

Student Interests and Aptitudes 9
Chart VII. 11
Chart VIII 11

Work Related Behaviors and Generalized Employability Outcomes Profiles 12
Chart IX 13
Chart X. 13
Chart XI 14
Chart XII. 14

Teacher Assistance and Student Performance 15
Chart XIII 15
Chart XIV. 16
Chart XV 17
Chart XVI. 17

Predicting Transitional Job Success 18
Chart XVII 19
Chart XVIII. 19
Chart XIX. 20

Follow-up Study Of CWE Student Ratings 21
Chart XX 21

Summary 22

References 24

HOW VOCATIONAL TEACHERS RATE CLASSROOM PERFORMANCE OF STUDENTS WITH MILD HANDICAPS USING CURRICULUM-BASED VOCATIONAL ASSESSMENT PROCEDURES

A Curriculum-Based Vocational Assessment (CBVA) model was developed, field tested, modified, and implemented in 45 middle, junior high, and senior high schools in the Department of Defense Dependents Schools (DoDDS) in Germany during the period of August 1984 to June 1987 (Porter & Stodden, 1986). The developmental plan was structured around six key steps to CBVA, (Ianacone & Laconte, 1986) which provided for: (1) identification of key personnel, (2) conducting a comprehensive search for program models, etc., (3) establishing basic considerations for the model, (4) establishing an operational plan to implement the process, (5) piloting and evaluating CBVA activities, and (6) implementing and evaluating the systemwide program. The activities culminated in a CBVA model description, a handbook of procedures, preliminary vocational assessment rating forms, and a plan for evaluating the project (Stodden, Ianacone, 1985).

The formative evaluation (Stodden, 1986) following the field test provided important feedback from 175 vocational teachers and 23 other special education teachers and counselors. The results demonstrated high confidence in the reliability and validity status of the CBVA rating forms and proffered many suggestions regarding procedural modifications subsequently made in the revised CBVA handbook (Stodden & Ianacone, 1986). A preliminary system analysis of student proficiency ratings, as assessed by their vocational teachers in regular vocational courses, revealed strong evidence of vocational teacher support and overall positive student achievement in the mainstream (Porter, 1987).

The current evaluation collects and analyzes demographic data concerning student proficiency levels following full scale implementation of the CBVA model during School Year 1986-87.

PURPOSE

The CBVA project is designed to assess the performance of mildly handicapped secondary level students after completion of regular vocational courses. Curriculum content outcomes for each course includes work related behaviors, generalized employability outcomes, and occupational skill outcomes. The primary intent for the use of CBVA data is to predict individual student competence through analysis of single and multiple ratings over extended school experiences in vocational subjects. The purpose of the program implementation evaluation is to discover the level of group performance in specific vocational courses and across the spectrum of vocational offerings. Answers to the following questions are sought:

1. How well do students perform on work related behaviors, generalized employability outcomes, and occupational skill outcomes in each vocational course offering?

2. What levels of interest and aptitude do teachers rate students as having for the content areas after instruction?

3. How proficient are students in specific work related behaviors and generalized employability outcomes when rated across the spectrum of vocational courses?

4. How much extra assistance do students require from vocational teachers in becoming proficient in work related behaviors, employability outcomes, and occupational skill outcomes?

5. What are the trends in proficiency ratings, interests, and aptitudes by gender?

6. Can student ratings received from vocational teachers be used to predict expected work related behaviors and generalized employability outcomes in subsequent work environments?

The evaluation is limited to the demographic observations of student proficiency levels and vocational teacher rating trends, neither of which insures that the CBVA Model contributes to student achievement nor teacher performance. The data does provide a comprehensive view of the achievement levels of mildly handicapped students mainstreamed in vocational courses from 6th to 12th grades and of the feasibility of collecting curriculum-based performance data from vocational teachers. Both outcomes are considered important to the growing desire within the profession to apply CBVA techniques to normal vocational instructional environments (Cobb, 1983) (Cobb & Larkin, 1985).

METHOD

CBVA rating forms (See Page 3) were distributed to vocational teachers and Cooperative Work Experience (CWE) job supervisors. Instructors were asked to assess all mildly handicapped students with Individualized Education Programs who were enrolled in vocational courses at the end of both first and second semesters. At middle/junior high school levels, exploratory courses could terminate as early as 6 weeks and be included in the study. The data were grouped for analysis according to whether students were enrolled in grades 6 to 8 or in grades 9 to 12. The groups were composed of 28 high schools with 979 ratings provided for students in grades 9 to 12 and 36 middle/junior high schools with 832 ratings provided for students in grades 6 to 8. Personnel completing CBVA forms included 120 vocational teachers from middle/junior high school levels and 152 teachers from senior high school levels. There were 149 high school CWE students assessed by 45 CWE job placement coordinators or their work site supervisors.

Content validity was established during the 1985-86 school year formative evaluation and further improved through modifications made by vocational

DoDDS-G CURRICULUM-BASED VOCATIONAL ASSESSMENT RATING FORM

COSMETOLOGY

COURSE LENGTH: 9 WKS __ 18 WKS __

STUDENT LAST NAME FIRST SEX (M F) GRADE SCHOOL

DIRECTIONS:
1. DO NOT RATE ANY BEHAVIOR OR OUTCOME NOT TAUGHT OR OBSERVED.
2. CHECK P IF THE STUDENT CAN PERFORM AT THE INSTRUCTOR'S LEVEL OF EXPECTATION.
3. CHECK M IF THE STUDENT CAN PERFORM AT THE INSTRUCTOR'S LEVEL OF EXPECTATION WHEN INSTRUCTION HAS BEEN MODIFIED.
4. LIST ADDITIONAL BEHAVIORS AND OUTCOMES AS NEEDED.

I. WORK RELATED BEHAVIORS	P	M
1. Display initiative		
2. Exhibit a desire to improve		
3. Display integrity		
4. Exhibit self-confidence		
5. Display frustration tolerance		
6. Exhibit flexibility		
7. Make judgments and decisions		
8. Relate with peers/co-workers		
9. Relate with teachers/supervisors		
10. Cooperate as a team member		
11. Accept constructive criticism		
12. Work unsupervised		
13. Complete tasks accurately		
14. Complete tasks in a timely manner		
15. Seek assistance appropriately		
16. Display appropriate habits/manners		
17. Display appropriate appearance		
18. Comply with attendance regulations		
19. Practice punctuality		
20. Display appropriate conduct		
21. Care for materials/equipment		

II. GENERALIZED EMPLOYABILITY OUTCOMES	P	M
1. Understand oral directions		
2. Give oral directions		
3. Understand written directions		
4. Apply related terminology		
5. Apply related measurement functions		
6. Apply related math computations		
7. Apply related science concepts		
8. Practice related hygienic requirements		
9. Demonstrate safety precautions		
10. Demonstrate problem solving technique		
11. Show interest in occupational area		
12. Perform equipment maintenance		
13. Understand employer-employee roles		
14. Understand function of a supervisor		
15. Understand role of employee evaluation		
16. Understand business enterprise function		

III. OCCUPATIONAL SKILL OUTCOMES	P	M
1. Sanitize the service area		
2. Sanitize implements		
3. Give a basic shampoo		
4. Shampoo lightened hair		
5. Give special rinses		
6. Give a basic scissors cut		
7. Give a razor cut		
8. Layer-cut hair		
9. Slither hair		
10. Shingle hair		
11. Thin hair with razor		
12. Use thinning shears		
13. Give a finger wave		
14. Give a marcel wave		
15. Make pin curls		
16. Make roller curls		
17. Comb hair into style		
18. Blow-style hair		
19. Straighten hair		
20. Perform a color analysis		
21. Mix water base solution		
22. Mix permanent coloring solutions		
23. Perform skin sensitivity test		
24. Apply hair toners		
25. Apply semi-permanent tint		
26. Apply temporary tint		
27. Apply permanent tint		
28. Remove artificial color		
29. Lighten hair		
30. Apply bleach for retouch		
31. Frost/streak hair		
32. Give a cold wave		
33. Relax hair chemically		
34. Treat damaged hair		
35. Massage scalp		
36. Treat dandruff		
37. Treat dry or oily scalp		
38. Give a plain manicure		
39. Give an oil manicure		
40. Make nail repairs		

AS RELATED TO YOUR COURSE, CIRCLE THE STUDENT'S OVERALL

INTEREST . . . HIGH MEDIUM LOW

APTITUDE . . . HIGH MEDIUM LOW

PLEASE LIST MODIFICATIONS, ADDITIONAL COMMENTS ON THE REVERSE OF THIS FORM.

INSTRUCTOR'S SIGNATURE DATE

DSG FORM 2819.9-R (July '986)

PLEASE RETURN THIS FORM TO THE CSC.

teachers. Of 174 instructor respondents in the pilot study, 94.8 percent indicated that the work related behavior items were appropriate for their courses. The generalized employability outcomes were considered appropriate by 85.5 percent of the respondents and 82.7 percent found the specific occupational skill outcomes to be appropriate. No major changes were recommended for work related behaviors or generalized employability outcomes following the formative evaluation. Several of the occupational skill outcomes were modified based on recommendations from the content area teachers.

Initial tests of CBVA instrument reliability in the 1986 formative evaluation were also encouraging. A coefficient of congruence was calculated for the 21 work related behaviors and 16 employability outcomes variables for paired teacher raters using 171 student observations after 9 weeks of instruction. The procedure provided a measure of pattern as well as magnitude similarity. The coefficient of congruence for work related behaviors ranged from 0.867 to 1.000, with a mean coefficient of 0.946. For generalized employability outcomes, the coefficient ranged from 0.924 to 1.000, with a mean coefficient of 0.969. The coefficients indicated effective inter-rater agreement.

Proficiency levels of students were determined by computing percentages of teachers' ratings for each instructor in 7 content areas at middle/junior high school grade levels and 11 content areas offered in high schools.

Two levels of proficiency could be rated. An item rated as being proficient indicated that the student attained the proficiency independent of any significant teacher assistance. An item rated as proficient with modification indicated that the student attained proficiency with some type of additional assistance being required. Teachers alone decide what constitutes "proficiency" or "additional assistance." The CBVA instrument was designed to only generate ratings for satisfactory performance.

Proficiency ratings were then grouped according to 21 work related behaviors and 16 generalized employability outcomes standardized across all vocational courses and CWE. The specific occupational skill outcomes were initially selected and validated by teachers for each vocational course. The occupational skill outcomes were represented by selections of student learning objectives taken from the DoDDS curriculum manuals published for each content area. Teachers select those occupational skill outcomes that apply and add others from their programs, if necessary. The proficiency levels were determined by calculating the average number of occupational skill outcomes attained in each content area from the total number identified.

Correlations of ratings provided by high school vocational teachers and those of job supervisors were made to determine how well the CBVA data furnished by high school vocational teachers might be used to predict future student performance in work related behaviors and generalized employability outcomes in real work environments. The population included 127 students enrolled in grades 10, 11, and 12 who were rated by their vocational teachers and 96 CWE students who were rated by their job supervisors. The Pearson Product-Moment Correlation Coefficient was applied to test the relationships between the two sets of paired data.

Vocational teachers also rated individual students on interest shown for the course during the instructional period and on the level of aptitude students appeared to demonstrate for the content area. Ratings were expressed as being either high, medium, or low for each category. Average ratings for each group were converted to percents.

The amount of additional teacher assistance needed by students to become proficient was calculated as a percentage of their total proficiency ratings across all vocational course offerings for each item listed in the work related behaviors and generalized employability outcomes. The amount of teacher assistance provided was also determined on student ratings of occupational skill outcomes by subject area.

Finally, the data were analyzed to observe differences between male and female students on all proficiencies gained and on the levels of interests and aptitudes reported.

RESULTS

The results are based on data collected for 7 middle/junior high school vocational subjects and 11 senior high school vocational subjects in which substantial numbers of students were enrolled.

Charts I through VI demonstrate student proficiency levels in individual vocational subjects for the total number of outcomes rated in (1) work related behaviors, (2) generalized employability outcomes, and (3) occupational skill outcomes for grades 6 through 8 and for grades 9 through 12. Middle and junior high school students take the vocational courses for exploratory purposes. The length of courses may vary from 6 weeks to 18 weeks depending on individual school scheduling practices. Students in grades 9 through 12 were enrolled for a minimum of 18 weeks in every course.

Work Related Behavior Observations

Middle/junior high school students were found to express positive work related behaviors ranging from 97 percent in the Business Enterprise course to 69 percent in Educational Computing, Chart I. By observation, there were no substantial differences in the performance of girls and boys.

At the high school level, Chart II, the students performed from 100 percent in Automotive Technology to 61 percent in Graphics. Again, there were no substantial differences between male and female students except for Graphics where girls were rated 26 percent points lower than boys and Drafting where boys rated 32 percent points lower than girls.

The high behavior ratings received by special education students appeared to demonstrate positive social adaptability when receiving instruction from vocational teachers in the mainstream programs.

Chart I
GROUPED WORK RELATED BEHAVIORS:
GRADES 6-8

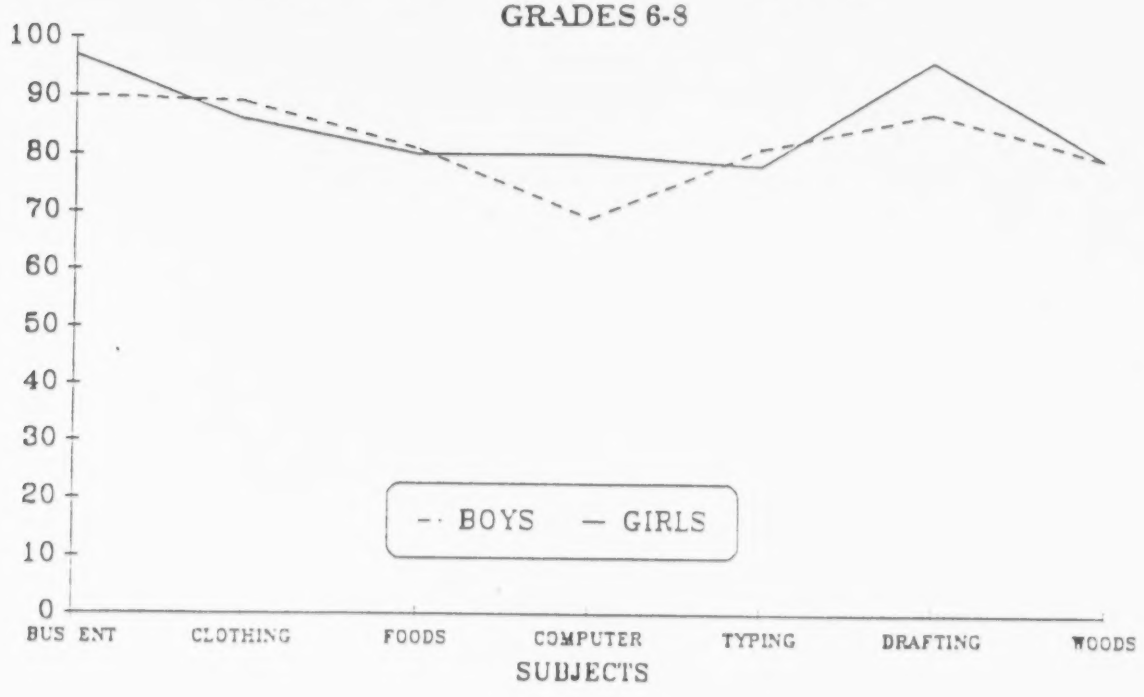
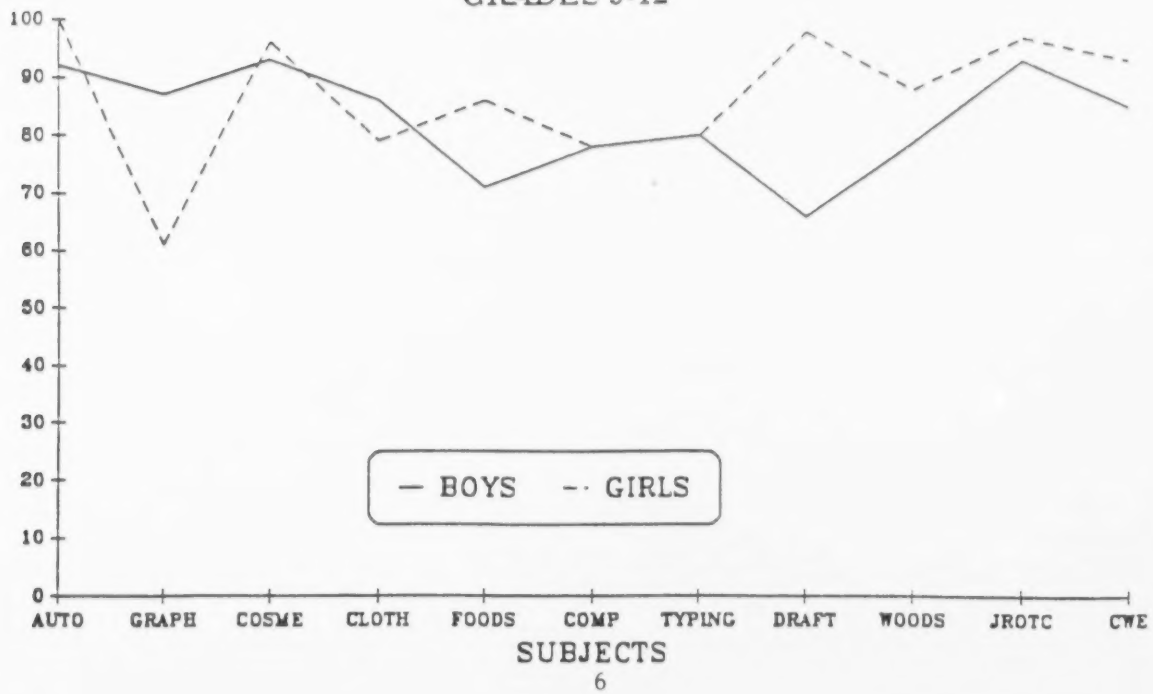


Chart II
GROUPED WORK RELATED BEHAVIORS:
GRADES 9-12



6

Generalized Employability Outcome Applications

The category of "generalized employability outcomes" refers to the student's proficiency in applying related academic skills, displaying safety and equipment maintenance precautions, understanding the roles of employees and supervisors, and in conceptualizing the functions of a business enterprise. The content is more abstract and reveals a measure of cognitive applications to specific vocational instruction. Since teachers were instructed to limit their ratings to those generalized outcomes that they teach or otherwise observe, the ratings were not as comprehensive or consistent in denoting student proficiencies involving such outcomes as the "application of science concepts" or the "understanding of employer/employee relationships," for example, as they were for demonstrating work related behaviors in which teachers have common interests.

Middle/junior high school students, Chart III, demonstrated overall proficiencies in generalized employability outcomes ranging from 79 percent in Business Enterprise to 26 percent in Educational Computing. Major differences in the ratings between boys and girls were not evident. Chart IV reflects senior high school students proficiencies in generalized employability outcomes. Proficiency ratings ranged from a high of 71 percent in Cosmetology and CWE to a low of 27 percent in Educational Computing. Boys rated slightly higher than girls in 9 of the 11 vocational subjects.

Examination of the rating forms revealed a reluctance of teachers to rate several of the academic skills associated with the vocational content. This was especially evident in Educational Computing and Typing where the direct application of academic skills is not as apparent in the more regimented learning tasks associated with both courses. Another area which was not rated by most teachers dealt with employee/employer relationships and in conceptualizing the function of businesses. The Business Enterprise and CWE courses provide concrete work environments where such outcomes are more easily observed. More ratings were given in those two subjects.

Occupational Skills Gained

"Occupational skill outcomes" refer to those most functional vocational content objectives that students are expected to accomplish in each course. Sub-skills generally have to be learned for students to achieve proficiency in an occupational outcome. The CBVA model was designed to assess functional outcomes rather than sub-skills because it was felt that the assessment profile would be more useful in making further decisions about vocational course selection and CWE placements. Further, as students progress through various types of vocational courses, the sub skills are either learned or reinforced as occupational skill outcomes develop. The acquisition of an occupational outcome, therefore, implies that dependent prerequisite skills have been learned.

Chart V reflects the proficiencies of middle/junior high school students at the exploratory stage in occupational skill outcomes. They ranged from 27 percent in Drafting to 52 percent in Clothing and Woods. The average ratings for achievement of occupational skill outcomes for boys was 41.7 percent and 43.2 percent for girls. Since the occupational skill outcomes listed on the

Chart III
GROUPED
GENERALIZED EMPLOYABILITY OUTCOMES:
GRADES 6-8

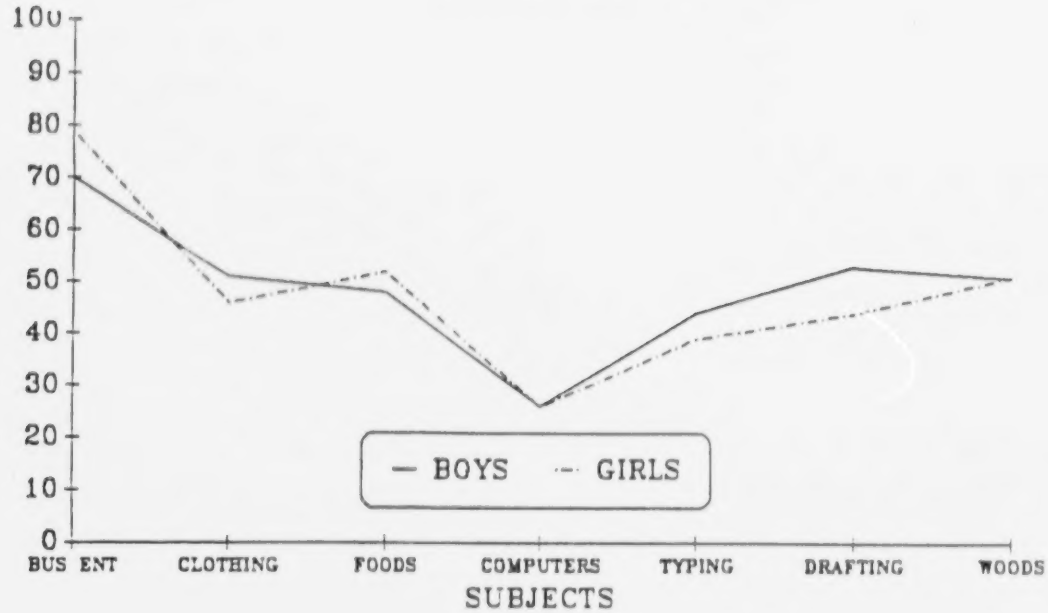
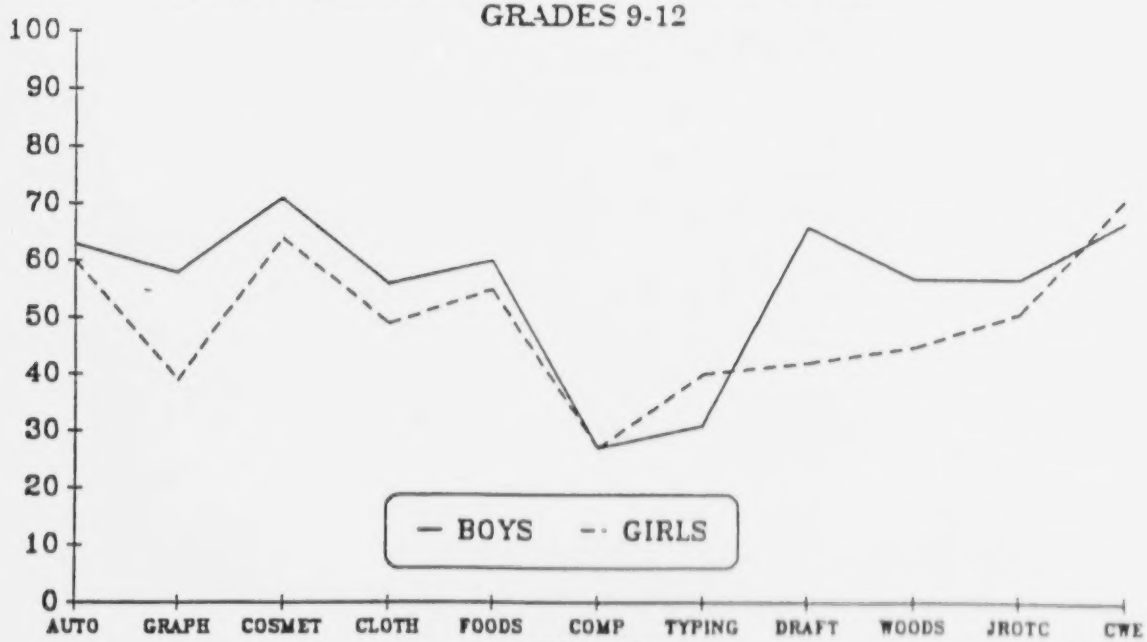


Chart IV
GROUPED
GENERALIZED EMPLOYABILITY OUTCOMES:
GRADES 9-12



8

student rating forms also include advanced level outcomes, the acquisition of over 40 percent of the skills by entry level students in courses ranging from 6 to 18 weeks duration is considered impressive.

At the high school level, Chart VI, the percentages in occupational skill outcomes ranged from 27 percent in Graphics to 68 percent in Clothing. The average achievement in occupational skill outcomes for boys was 54 percent and 52.4 percent for girls. Although all courses are 18 weeks long with opportunities to take advanced instruction, most handicapped students are reflecting entry level achievement.

To summarize, the proficiencies gained by mildly handicapped students within the vocational curriculum mainstream at all secondary levels appear to be quite acceptable. Of promising note, are the exceptionally high proficiency ratings in work related behaviors. Such ratings not only demonstrate an admirable quality of social behavior on the part of handicapped students, but also demonstrate the value vocational instructors place on teaching behavioral objectives. Such performance helps lay to rest pernicious thinking that handicapped students will be behavioral problems in vocational classes.

Another positive finding is the level of occupational skill development gained by middle/junior high school students in short term exploratory subjects for which prior vocational assessment information is not available. Their performance supports the system's premise that handicapped students need to be enrolled in various vocational subjects, regardless of background diagnostic information, to prevent possible exclusion from vocational instruction due to diagnostic bias that may result from evaluating students who lack initial learning experiences. The CBVA assessment procedure reflects student performance as products of current educational experience, leaving little room for diagnostic voids or unthoughtful interpretations.

Student Interests and Aptitudes

The CBVA instrument provides opportunities for vocational teachers to estimate each student's interest in the course as well as aptitude for the content.

Chart VII, displays the results of interest and aptitude ratings for middle/junior high school students. It can be observed that student interests tend to run at average and high average levels. Aptitude ratings for the exploratory subject areas were similar though from 5 to 18 percent lower than interest levels. Students displayed highest aptitude for the Business Enterprise course, 70 percent , and lowest for Typing and Drafting, 52 percent. Differences by gender were observed to be slight.

At the high school level, interest in vocational subjects generally fell in the high average to high range, Chart VIII. The courses commanding highest interest were CWE, JROTC, Clothing, and Graphic Arts. The lowest interest, 65 percent, was found to be in Woods. Boys rated considerably higher in Automotive Technology, Graphic Arts, and Woods; Girls in Cosmetology, Educational Computing, and Foods.

Chart V
OCCUPATIONAL SKILLS OUTCOMES: GRADES 6-8

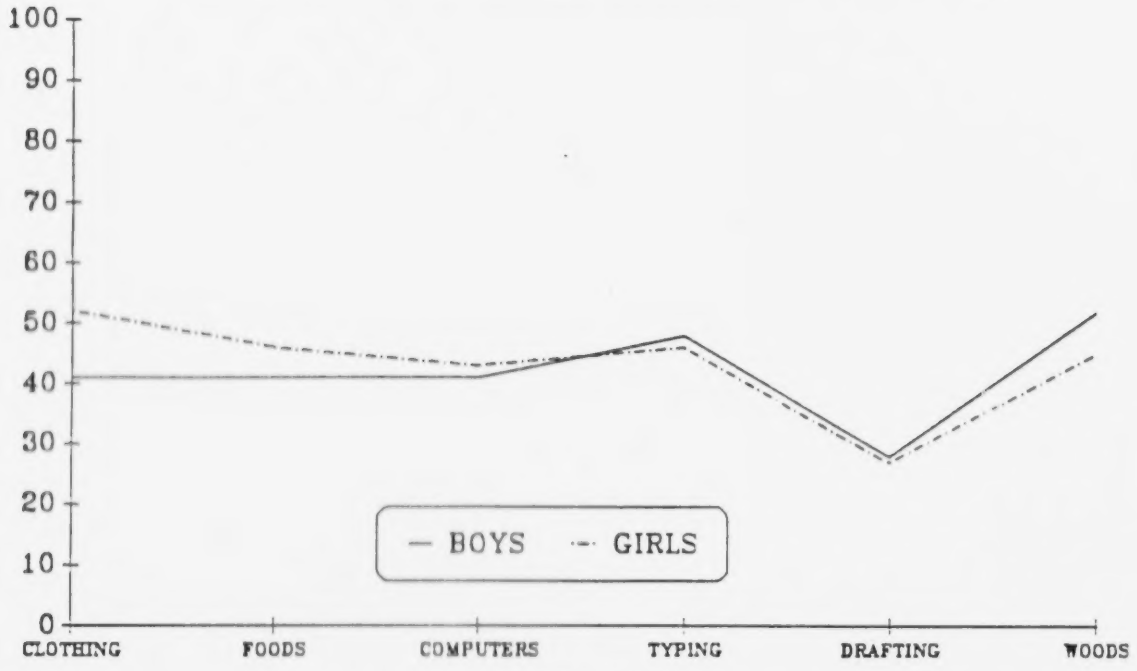


Chart VI
OCCUPATIONAL SKILLS OUTCOMES: GRADES 9-12

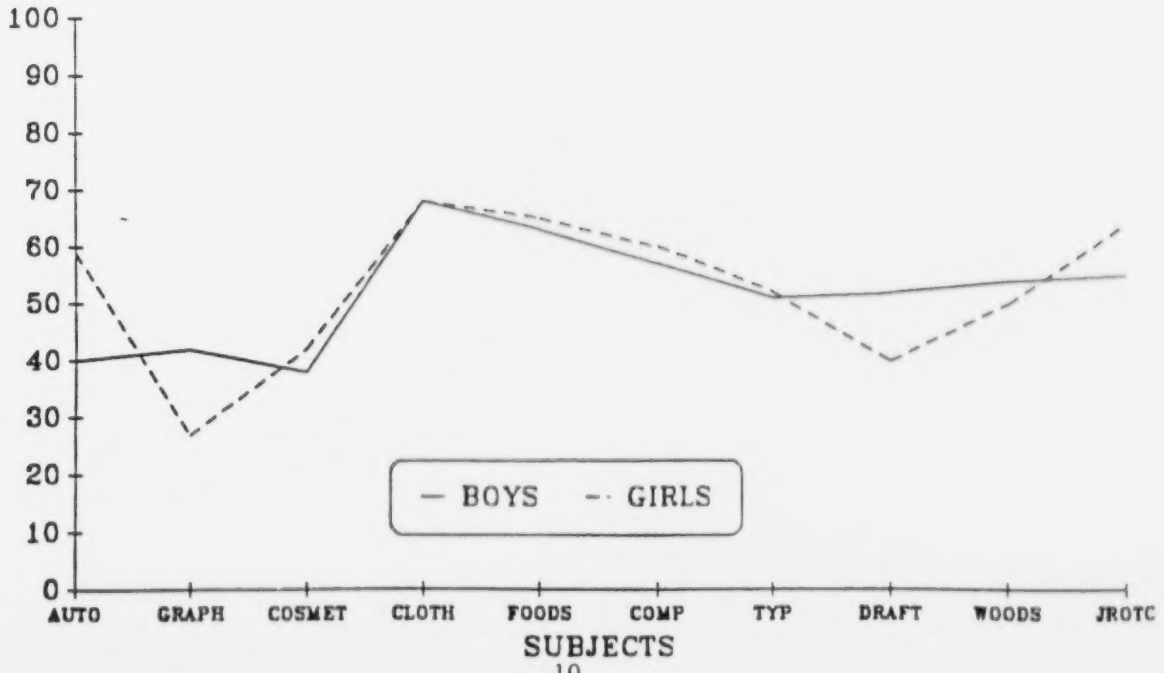


Chart VII
INTEREST/APTITUDE: GRADES 6-8

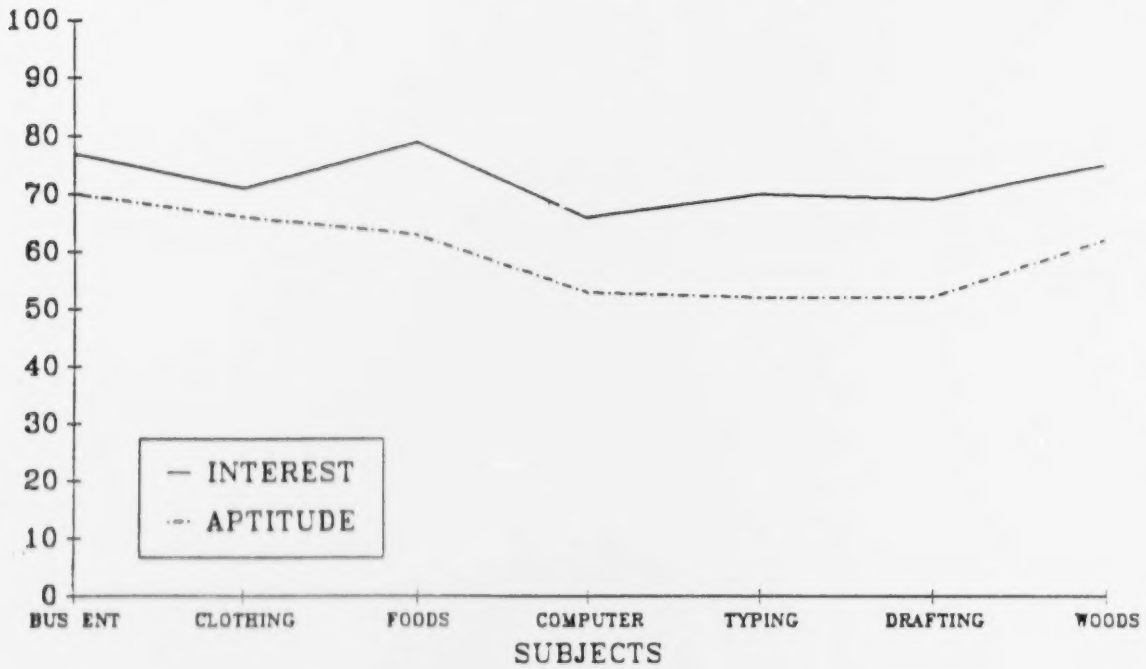


Chart VIII
INTEREST/APTITUDE: GRADES 9-12

While high school student aptitudes for the subject areas were rated lower than interests, they all fell within the average to high-average ranges. Girls received slightly higher aptitude ratings than boys in 7 of the 11 subjects. The highest aptitude rating, 70 percent, was in CWE where the measure of success tends to be on what students can do in work environments rather than on what they appear to know from performance on classroom examinations.

Work Related Behaviors and Generalized Employability Outcomes Profiles

When the 21 work related behaviors and the 16 generalized employability outcomes are individually examined across the spectrum of vocational subjects, the ratings yield information which can be used to better understand common strengths and limitations of student performance as well as possible instructional gaps to be considered for additional program emphasis.

Students in grades 6-8 displayed a consistently high performance pattern of work related behaviors, Chart IX. All work related behaviors were rated above 75 percent. Girls tended to rate slightly higher than boys.

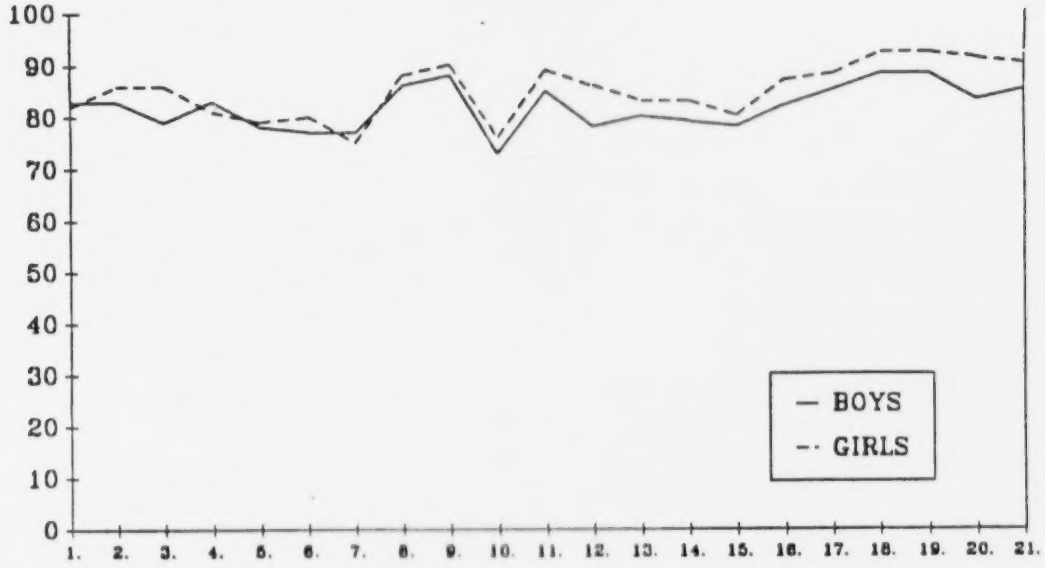
High school students, Chart X, also rated high on work related behaviors with the lowest rating being 78 percent. Differences between the performance of boys and girls were negligible.

A diverse pattern of generalized employability outcomes emerged for students at both secondary levels. In grades 6-8, Chart XI, students were rated proficient from 52 percent to 87.5 percent in their application of related academic skills with the exception of "science concepts" which was rated at 19 percent. Students also achieved proficiencies above 50 percent in "practicing related hygienic requirements," "demonstrating safety precautions," "demonstrating problem solving techniques," and "showing interest in the occupational area." Teachers rated fewer students as being proficient in "performing equipment maintenance," 32 percent, "understanding various employer/employee relationships," 21 percent to 29 percent, and in "understanding business enterprise functions," 17 percent. The performance of middle/junior high school boys and girls was similar.

Chart XII indicates the proficiencies achieved in generalized employability outcomes by senior high school students. Although the proficiency levels for "applying related science concepts" improved, the outcome (27 percent) was still rated lowest for the group of related academic skills. Strengths included proficiencies in "understanding oral directions, (87 percent) and "understanding written directions" (79.5 percent). Other strengths above 60 percent included "applying related terminology," "practicing related hygienic requirements," and "demonstrating safety precautions." The lowest employability outcome (19 percent) was in "understanding the function of a business enterprise."

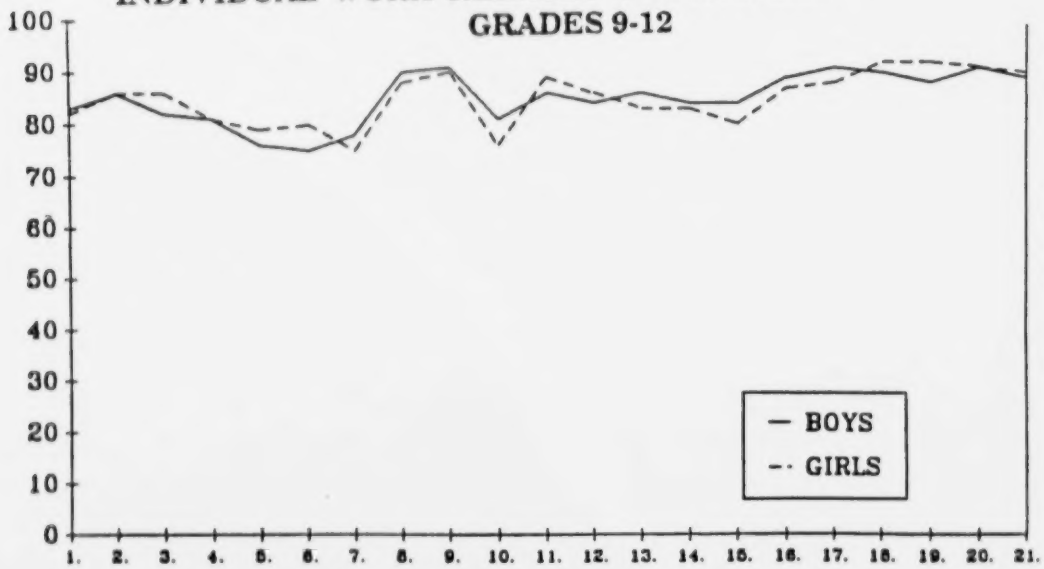
It would appear that vocational teachers, while demonstrating success in teaching student work related behaviors, employability outcomes, and occupational skills, may not be emphasizing how those traits contribute to

Chart IX
INDIVIDUAL WORK RELATED BEHAVIORS:
GRADES 6-8



BEHAVIORS FROM CBVA RATING FORM

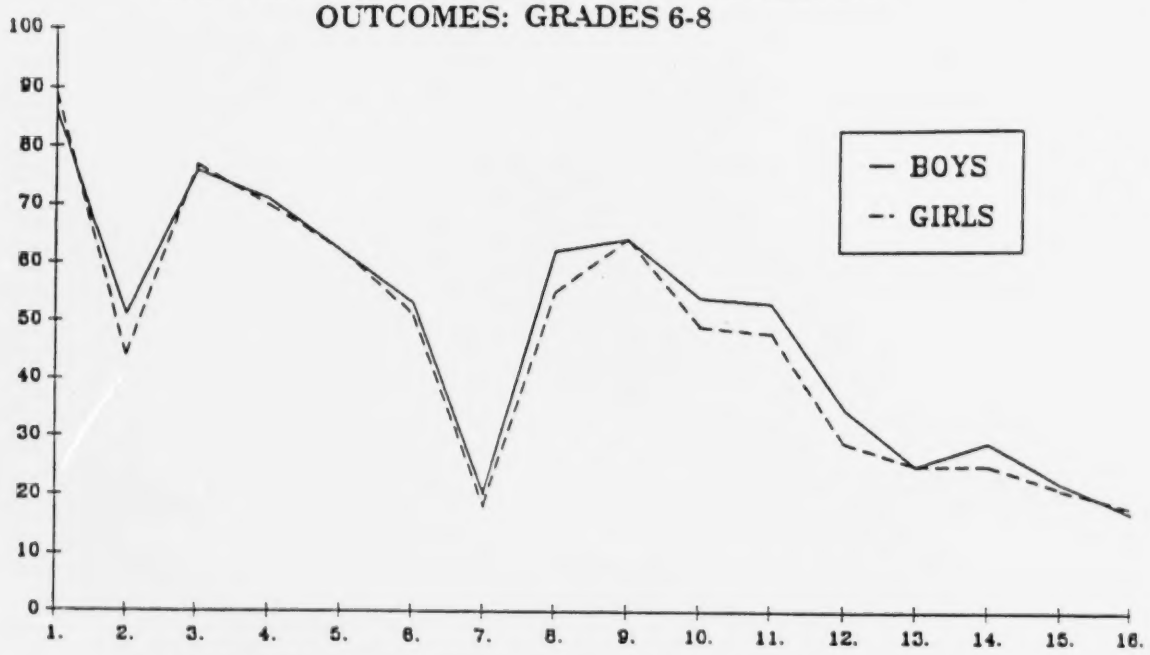
Chart X
INDIVIDUAL WORK RELATED BEHAVIORS:
GRADES 9-12



BEHAVIORS FROM CBVA RATING FORM

Chart XI

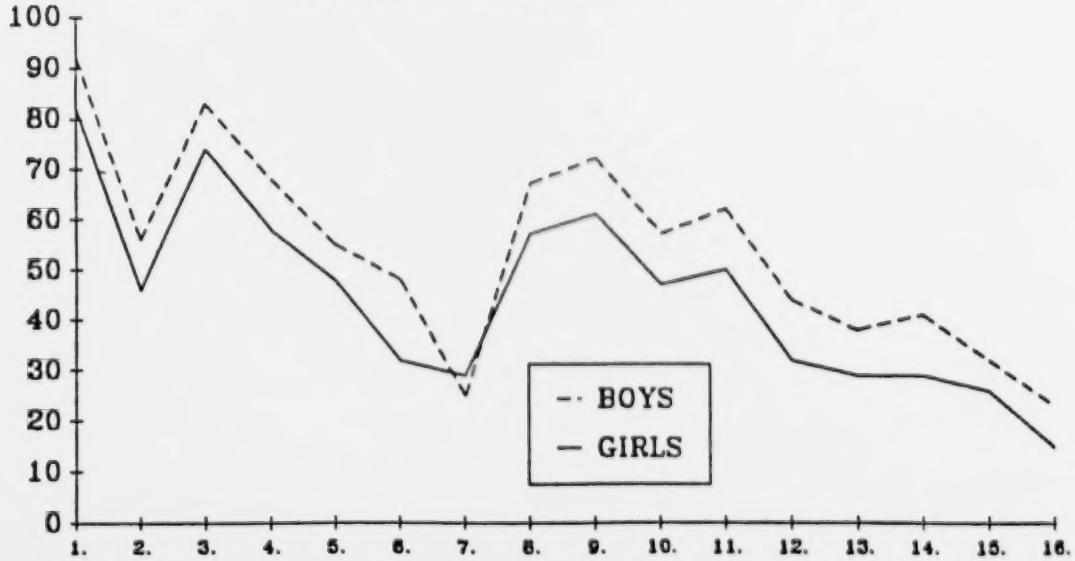
INDIVIDUAL GENERALIZED EMPLOYABILITY
OUTCOMES: GRADES 6-8



OUTCOMES FROM CBVA RAT[illegible]G FORM

Chart XII

INDIVIDUAL GENERALIZED EMPLOYABILITY
G] OUTCOMES: GRADES 9-12



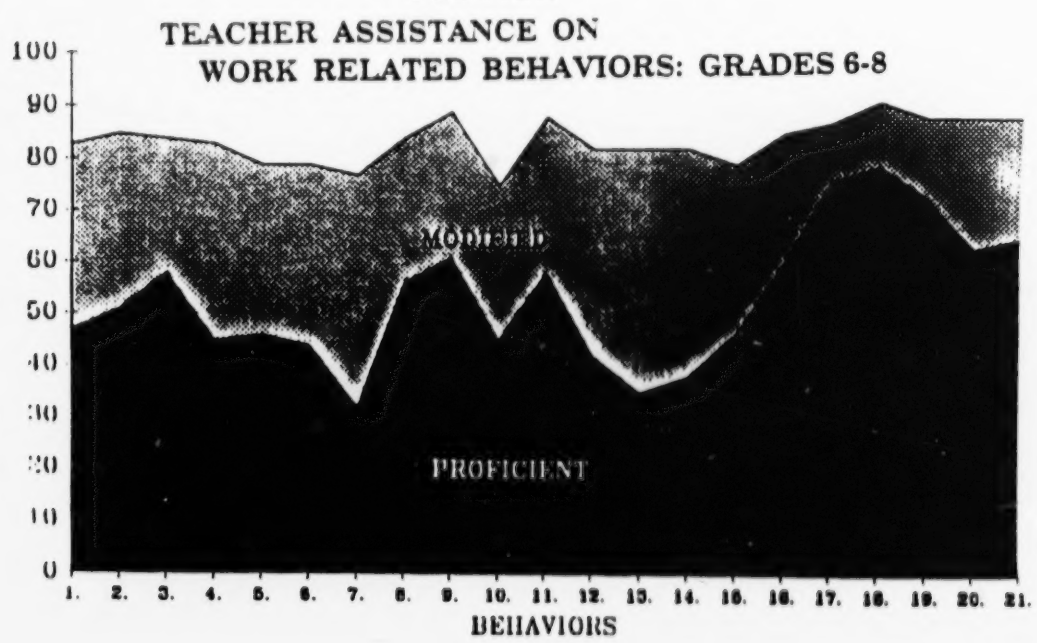
OUTCOMES FROM CBVA RATING FORM

the success of a business enterprise, the source of most occupational opportunities. In fact, the fewest proficiency ratings among the generalized employability outcomes were found to be those associated with understanding business related roles and concepts.

Teacher Assistance and Student Performance

Chart XIII displays the average amount of additional assistance middle/junior high school teachers provided students. On the 21 work related behaviors, 33 percent of the total proficiency levels achieved by boys was attributed to extra teacher assistance. Girls required only 21 percent teacher assistance to obtain their total proficiency levels. Teachers gave boys more help than girls. The extra help appears to pay off as total proficiencies are about equal between the sexes. Outcomes requiring the most teacher assistance by both sexes were "making judgments and decisions," "completing tasks accurately," and "completing tasks in a timely manner." Those requiring the least were "displaying appropriate appearance," "complying with attendance regulations," and "practicing punctuality."

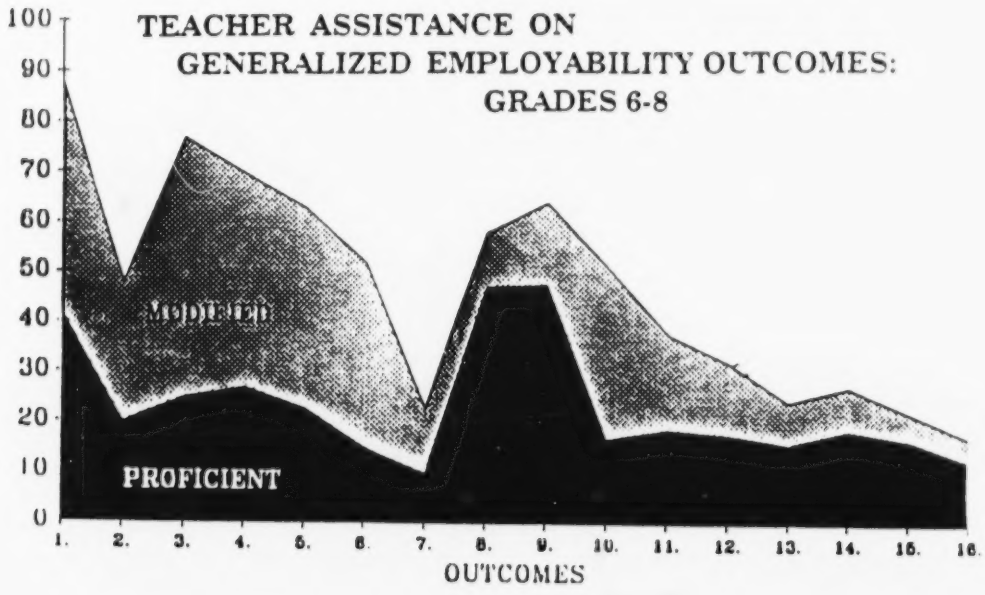
Chart XIII



On the 16 generalized employability outcomes, Chart XIV, middle/junior high school students benefitted most from teacher assistance in outcomes including "understanding oral directions," "understanding written directions," "applying related terminology," "applying related measurement functions," and "demonstrating problem solving techniques."

Those requiring minimal teacher assistance were outcomes where students also demonstrated low overall proficiency levels to include "understanding employer/employee roles," "understanding the function of a supervisor," and "understanding the role of employee evaluation." The average amount of extra assistance provided to boys was 25.6 percent and to girls was 22.2 percent of their respective total proficiency levels. The question of whether students did not perform as well due to their ability or as a consequence of the content not being addressed in the instructional program, was not determined, but the fact that teachers did not provide the level of assistance that they did in academic areas suggests that employer/employee relationships were not stressed in the vocational curriculums.

Chart XIV



Data were also collected for each of the 18 vocational courses on occupational skill outcomes. Middle/junior high school students were given special assistance on 21 percent of the total proficiencies acquired, Chart XV. Differences occurring by vocational course content varied but can only be properly analyzed by each teacher since the outcomes criteria can be modified for any course by any teacher.

For high school students, the average amount of assistance provided by teachers on work related behaviors is displayed on Chart XVI. Boys were assisted on 36 percent and Girls on 28 percent of the total proficiencies gained. The extra assistance brought the total performance of boys up to the levels achieved by the girls and both groups appeared to benefit significantly from such assistance.

Chart XV

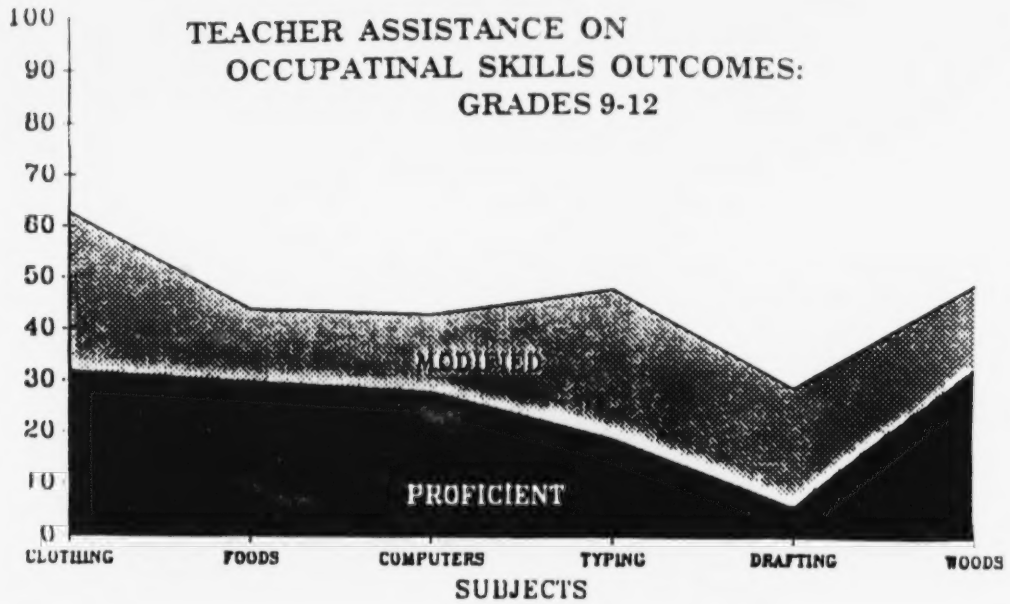
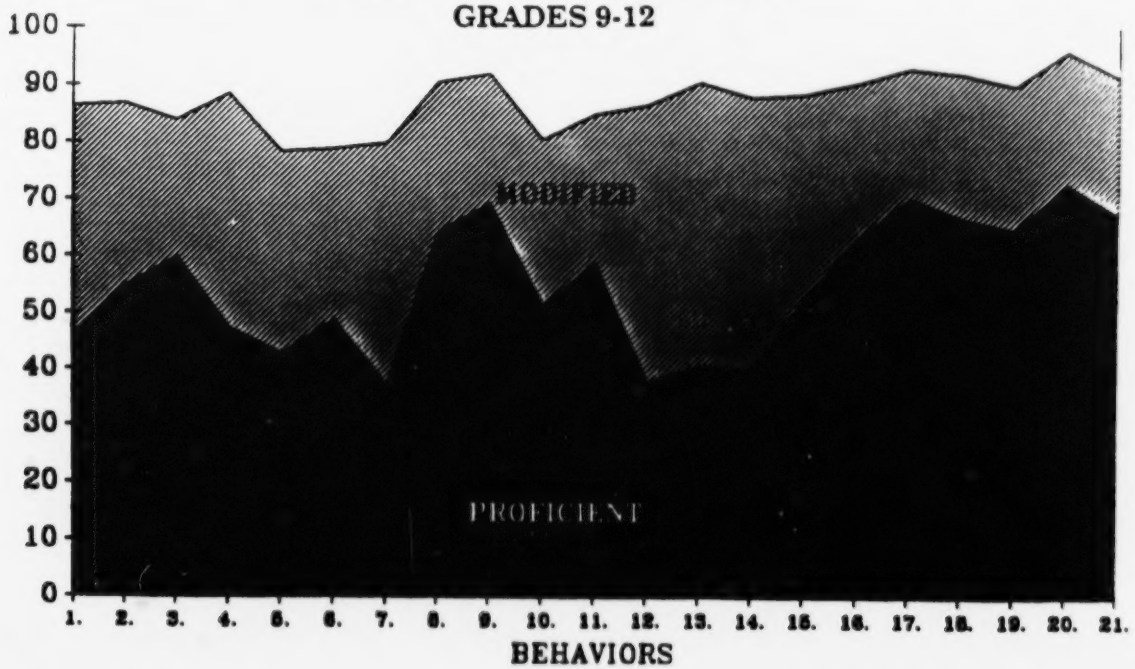


CHART XVI



Students received most help in "working unsupervised," "completing tasks accurately," and "completing tasks in a timely manner." Less assistance was needed on "relating with peers" and "displaying appropriate appearance." On generalized employability outcomes, Chart XVII, the average amount of assistance for high school boys (24 percent), and girls (20 percent) was considerably less as were the total proficiencies gained. However, the amount of assistance made important contributions to their overall achievement levels. Students received most help in "understanding oral directions" and "understanding written directions." Those outcomes where students required less assistance were "understanding the business enterprise," and "applying related science concepts." As with the middle/junior high students, those outcomes where students received less assistance were also those where students received fewer proficiency ratings.

Chart XVIII for high school students, indicates the average amount of assistance provided by teachers on occupational skill development was 23 percent of the total proficiencies achieved. Less assistance was provided in Graphic Arts and Educational Computing, and the most in Automotive Technology.

It is clear that vocational teachers routinely make extra efforts in helping handicapped students achieve in their programs. It is also clear that the additional assistance provided makes important contributions to the overall performance of handicapped students.

Predicting Transitional Job Success

The CWE course offers the initial opportunity for handicapped students at grades 10, 11, and 12 to begin the transition from formal vocational training and general education into the world of work. While the CBVA model was primarily designed to assist students and their parents to make individual educational decisions throughout the middle/junior high and high school years, the potential for using the data to predict job entry level success in community work sites was also explored. The ratings received by teachers for all 10th, 11th, and 12th grade students who completed vocational courses were compared to the ratings given to all CWE students by their work site supervisors for work related behaviors and generalized employability outcomes, Chart XIX.

Vocational teachers and work site supervisors rated students as being proficient in work related behaviors at or above 84 percent. The correlation coefficient of .736 (significant at the .001 level) indicates that a positive relationship exists between the ratings of teachers and those of job supervisors.

Ratings for generalized employability outcomes were 51 percent from teachers and 69 percent from work supervisors. The correlation coefficient was .557, also significant at the .002 level. While both ratings would suggest that students have acquired the necessary behavioral and employability skills needed for entry level employment, work site supervisors rated student employability

Chart XVII

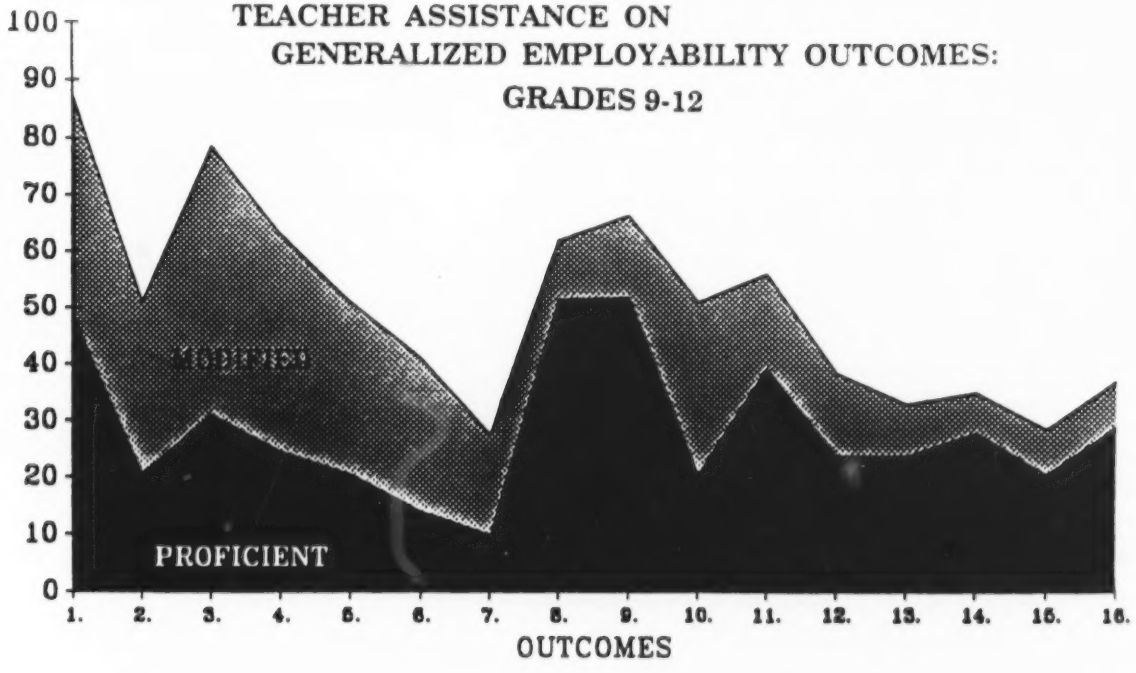


Chart XVIII

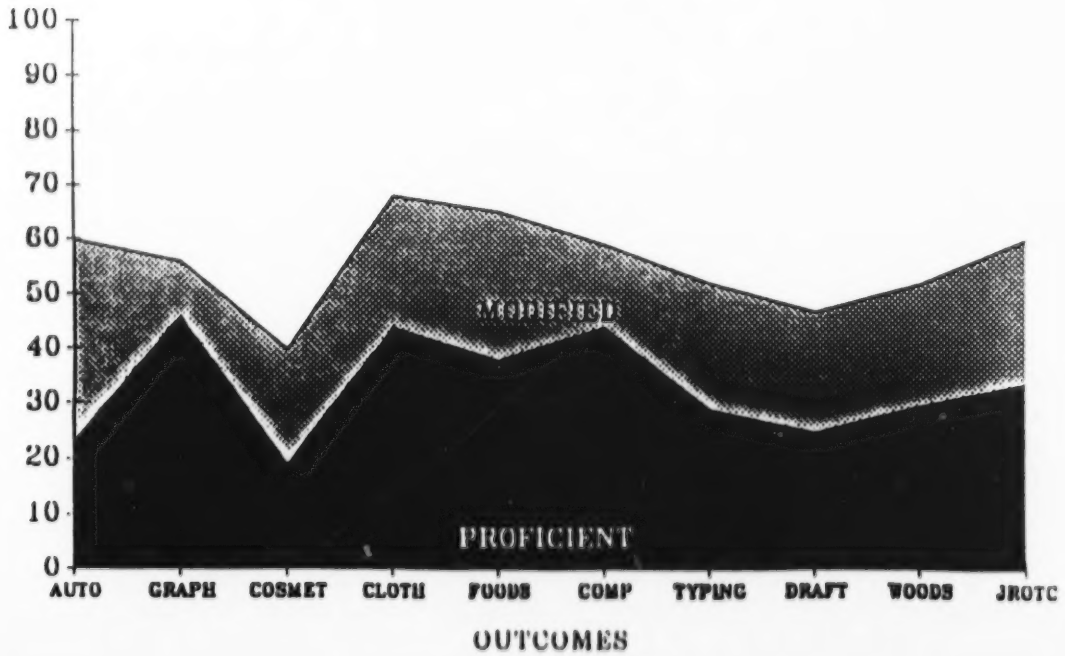
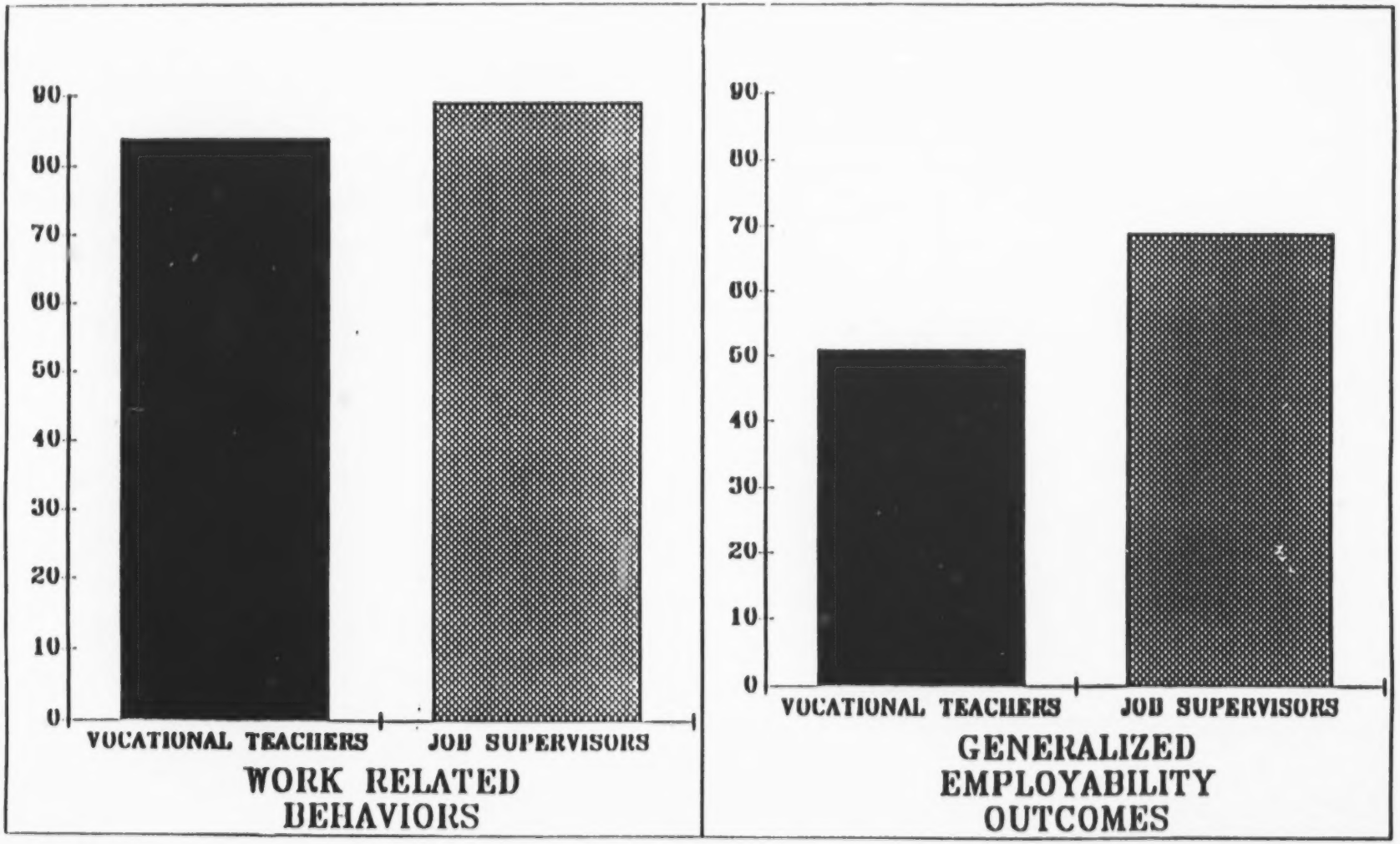


Chart XIX

COMPARISON OF STUDENT RATINGS

FROM VOCATIONAL TEACHERS AND JOB SUPERVISORS



outcomes 18 centile points higher than the ratings received from vocational teachers.

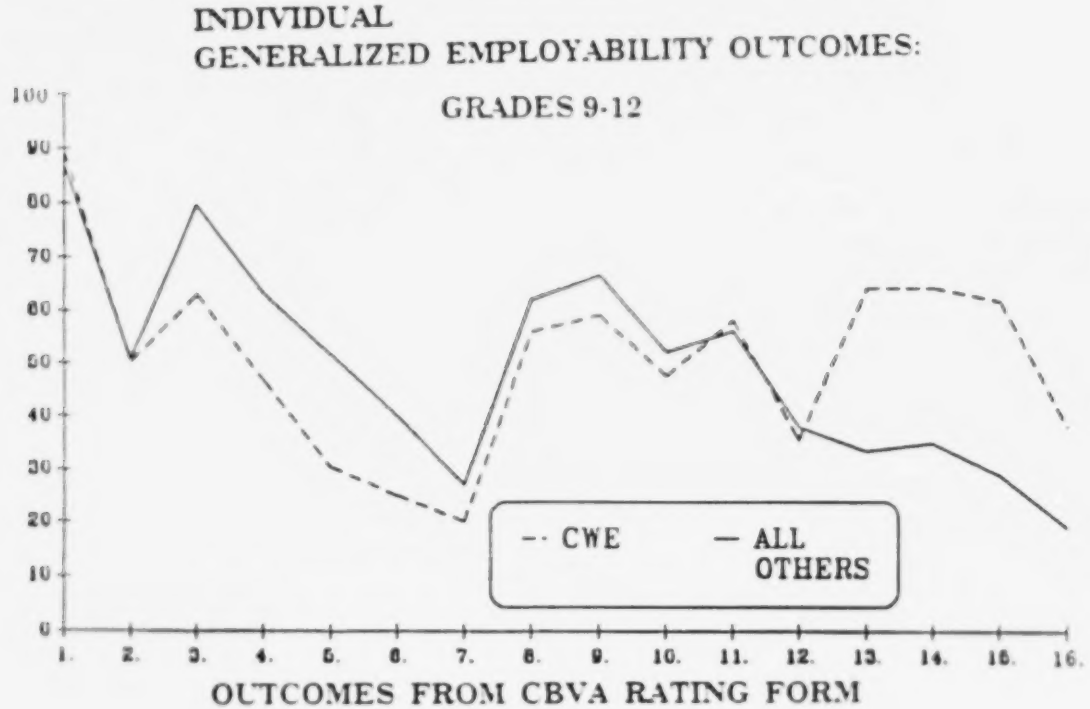
Further examination of the generalized employability outcomes, Chart XX, reveals that much higher ratings were received from work supervisors in the areas of "understanding employer/employee roles," "supervision," "personnel evaluation," and "the function of a Business Enterprise." As discussed earlier, teachers may not rate these areas as often due to the nature of vocational instruction which tends to emphasize occupational skill development in more formalized classroom confines than in actual work environments.

It does appear that the ratings of vocational teachers do have predictive credibility when used to assist students to enroll in CWE programs or when seeking entry level job placements upon graduation.

FOLLOW-UP STUDY OF CWE STUDENT RATINGS

CWE is the system's primary course and activity which contributes to the student transitioning process of applying basic and vocational education accomplishments to the post-high school world of work. For this reason a re-check on the high student ratings found in the 1986-87 study by job site supervisors was conducted to verify the initial findings.

Chart XX



The School Year 1987-88 data collection consisted of 191 CWE student ratings provided by 116 job supervisors. CWE students were rated as being proficient on 85 percent of the 21 work related behaviors. Seventy-five percent of the proficiencies gained were accomplished without special assistance or modification of the assigned tasks. The findings closely duplicated the results of the initial study thereby adding credability to the interpretation that handicapped students are demonstrating excellent social interaction and adaptability skills in community work environments.

Students averaged 62 percent proficiency on the 16 generalized employability outcomes which represented a 7 percent drop in proficiency ratings found in the intital study. However, the decrease in total job supervisor ratings would provide a closer match to those of vocational teachers (51 percent) which continue to be a significant correllation between the raters and also provides confidence in using vocational teacher CBVA ratings to predict student performance on real jobs. No major differences were found in the amount of special assistance job supervisors gave to CWE students. Over 77 percent of CWE students achievement was acquired without special assistance from job supervisors.

Similar successful patterns of achievement existed for students on occupational skills outcomes. They were rated 73 percent proficient on the total number of skills assigned and accomplished 77 percent of those skills without special assistance from job supervisors.

Finally, a comparison of School Year 1987-88 student interest in and aptitude for CWE job tasks were found to closely match the SY 1986-87 results. Interest ratings improved from 80 to 83 percent. Aptitude ratings also improved from 76 to 78 percent. The CWE course clearly contributes to the career development transition needs of handicapped students based on the high interest, aptitude, and performance ratings consistently received from their job supervisors. The CBVA procedure provides highly functional information about student performance, which is easily and routinely acquired for each work placement experienced during high school. Such information would appear to be important to decision-making activities that seek to locate entry level jobs for students upon graduation.

SUMMARY

A CBVA model was developed, field tested, and implemented in 45 middle/junior high, and senior high schools from 1984 through 1987. A rating scale was designed for vocational teachers to use with mildly handicapped learning impaired students when they were enrolled in vocational classes. A formative evaluation in 1986 provided feedback from 175 vocational teachers which also resulted in high reliability and content validity measures on the rating scale. The program was fully implemented in 36 middle/junior high schools and 28 high schools during School Year 1986-87.

The demographic study was designed to discover the extent of student achievement across 18 vocational courses in 21 work related behaviors, 16 generalized employability outcomes, and in 20-40 occupational skills outcomes found in each vocational curriculum. Vocational teacher ratings indicated that students were

either proficient (independently) or proficient with extra teacher assistance. The group data provided a measure of systemwide student achievement in mainstream vocational courses, in work related social behaviors, in the application of academic skills to vocational course content, and in the use of CBVA rating scales to predict expected student performance in transitional work environments.

Special education students were rated in the upper quartile for all 21 work related behaviors in both middle/junior high school and senior high school populations indicating positive social adaptability when receiving instruction in regular vocational classes. Performance on generalized employability skills was mixed. Students tended to rate average or better in applying academic skills to vocational instruction and to be less proficient in categories related to employer-employee relationships. An exception was in CWE where job supervisors rated students above average in the employee-employer relationship categories.

Vocational teachers indicated that extra assistance was routinely provided and that the proficiency levels achieved by students were dramatically improved by such assistance.

When vocational teacher ratings were correlated with those of CWE job supervisors for work related behaviors and generalized employability skills, the coefficients were significant for both categories, suggesting good potential for using the rating scales to predict performance in CWE and other transitional job placements.

The CBVA procedure generates comprehensive information about individuals or groups which is easily acquired, inexpensive, and functionally useful for diagnostic purposes.

REFERENCES

1. COBB, R. (1983) A Curriculum-Based Approach to Vocational Assessment. The Council for Exceptional Children, Summer, 216-219.

2. COBB, R. and LARKIN, D. (1985) Assessment and Placement of Handicapped Pupils Into Secondary Vocational Education Programs. Focus on Exceptional Children, 7, 1-13.

3. IANACONE, R. and LACONTE, P., (1986) Curriculum-Based Vocational Assessment: A Viable Response to a School-Based Service Delivery Issue. Career Development for Exceptional Individuals, 2, 113-120.

4. PORTER, M. and STODDEN, R., (1986) A Curriculum-Based Assessment Procedure: Addressing the School to Work Transition Needs. Career Development for Exceptional Individuals, 2, 121-128.

5. PORTER, M. (1987) Preliminary Report on Curriculum-Based Vocational Assessment Evaluation. Wiesbaden, West Germany: Department of Defense Dependents Schools, Education Division.

6. STODDEN, R. (1986) Evaluation, Phase I, Curriculum-Based Vocational Assessment Project. Wiesbaden, West Germany: Department of Defense Dependents Schools, Education Division.

7. STODDEN, R. and IANACONE, R., (1985) Curriculum-Based Vocational Assessment Handbook. Wiesbaden, West Germany: Department of Defense Dependents Schools, Education Division.

8. STODDEN, R. and IANACONE, R. (1986) Curriculum-Based Vocational Assessment Handbook (Revised). Wiesbaden, West Germany: Department of Defense Dependents Schools, Education Division.